



**CONSTRUCTION ENGINEERING LABORATORY, INC.**  
TESTING FOR QUALITY AND STRENGTH

**PROJECTS:**

**LAKE BYLLESBY & COON RAPIDS DAMS**

Cannon River                      Mississippi River  
Cannon Falls, MN                Coon Rapids, MN

**CONSTRUCTION PERIOD:**

**June 2013 to Present**

**CLIENT:**

**Edward Kraemer & Sons, Inc.**

1020 West Cliff Road  
Burnsville, MN 55337

**CONSTRUCTION COST:**

**\$7.5 & \$9.2 Million**



**PROJECT DESCRIPTION:**

Lake Byllesby Dam project consisted of removal of the existing fuse plug and installing a new spillway structure south of existing dam. The new spillway featured two crest gates with retaining wall structures downstream of the spillway. It also required raising the perimeter earthen dike to maintain pool levels without overtopping during larger flood events.

Coon Rapids Dam project consisted of rehabilitating the dam and involved constructing earthen and sheet pile cofferdams, removing four existing spillway gates, installing nine new hydraulic crest gates, demolition of the existing pile supported apron, construction of a new pile supported reinforced concrete spillway and miscellaneous repairs and modifications to the existing concrete structures, embankments and retaining walls.

**SERVICES PROVIDED:** Conducted laboratory and field tests with observations of soils, concrete, grout and bolted connections to assure compliance with applicable building codes, project plans and specifications. CEL performed compaction control tests behind downstream retaining wall, concrete tests in both new construction as well as rehabilitation areas, observed and documented post tensioned rock anchor installation and verified bolted gate connections.

**SPECIAL FEATURES:** Concrete construction on the Lake Byllesby Dam project occurred during the winter months and maintaining concrete temperatures during below freezing temperatures was critical for proper concrete curing, strength and quality. A concrete mix design high in fly ash content, yielded a slow hydrating mix that was very susceptible to freezing. CEL was tasked with monitoring temperature differential and evaluating the strength of the cast in-place concrete using maturity meters.

(2014-011-Edward Kraemer)